

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1-16 (canceled).

17. (New) A semiconductor device comprising:
a semiconductor substrate optionally personalized with electronic devices formed thereon;
at least one copper interconnect pad formed on said substrate; and
a layer of a zinc complex formed on said at least one interconnect pad, wherein said complex comprises:
copper ion,
zinc ion,
an organic acid and
an azole.

18. (New) The semiconductor device, according to claim 17, wherein said zinc complex further comprises a surfactant.

19. (New) The semiconductor device, according to claim 17, wherein said zinc complex further comprises an amine.

20. (New) The semiconductor device, according to claim 17, wherein said zinc complex further comprises a complexing agent.

21. (New) The semiconductor device, according to claim 17, wherein the molar ratio of said zinc ion to said azole is from about 1:1 to about 2:1.

22. (New) The semiconductor device, according to claim 17, wherein said azole is benzotriazole.
23. (New) The semiconductor device, according to claim 18, wherein said surfactant is a nonionic surfactant.
24. (New) The semiconductor device, according to claim 23, wherein said surfactant is selected from the group consisting of SANDOPAN ECO and Triton DF16.
25. (New) The semiconductor device, according to claim 17, further comprising ammonia.
26. (New) The semiconductor device, according to claim 20, wherein said complexing agent is triethanolamine.
27. (New) The semiconductor device, according to claim 17, wherein said organic acid is acetic acid.
28. (New) The semiconductor device, according to claim 17, wherein said zinc complex layer is deposited from a solution comprising:
at least one azole present at a concentration of from about 0.001 to about 0.5 molar;
a zinc salt having present at a concentration of from about 0.1 to about 1 molar;
an organic acid; and
a complexing agent, and wherein
the pH of said solution is from about 5 to about 8.
29. (New) The semiconductor device, according to claim 17, further comprising a layer of a solder applied to said zinc complex layer.